4.4 Freshwater Inflows

Data on the amounts of freshwater inflows flowing into Galveston Bay were calculated by the Texas Water Development Board (TWDB) for the period 1977-1998. No new data for the years 2000 or 2001 were available from the TWDB. Surface inflow calculations are a function of gaged flows, modeled flows, diversions and return flows.

The Trinity River Basin is responsible for the majority of the average total inflow into Galveston Bay while the San Jacinto River Basin (including areas below Lake Houston) and runoff from coastal urban watersheds contributes the remainder. The inflow from all three sources is quite variable over time.

Figure 4.4.1 shows the annual inflow volumes from the Trinity and San Jacinto Rivers from 1977 to 1998. Although total inflow to Galveston Bay appears to be stable over decadal time scales, variability in inflow commonly occurs over shorter time scales. The greatest short-term influence on inflow is the amount of precipitation received in the watersheds. As Figure 4.4.1 illustrates, the extreme drought years of 1978, 1988 and 1996 were periods of significantly lower freshwater inflow; wet years (1979 and 1991 through 1994) yielded higher than average inflow volumes.

Figure 4.4.1. Annual average inflow for the Trinity and San Jacinto Rivers, 1977-1998.